

## **Journal Collection – Value for Money?**

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**Abstract.** In the past few years, Finnish universities have taken place within the major changes. Organizations have been merged and the new University Act came into effect on 1st January 2010. Under the new Act, the universities were given autonomy over decision-making, but also more responsibility for their own financing. At present, about 64% of the university budget is provided by the government and the rest of the financing comes from paid services, donations and sponsoring.

The number of academic degrees and scientific publications is more and more important for university financing. Libraries have a significant role in supporting the publishing activities of the university by developing library services and acquiring resources for teaching and research.

In our article, we want to make a short examination how much doctoral students of the University of Eastern Finland (UEF) have used journals acquired by the library for their dissertations and by this way give an example of how the UEF Library supports academic research by purchasing appropriate material. We also take notice to the acquirement of these journals. For the research material, we have chosen a few dissertations of each faculty of the University of Eastern Finland published during the year 2012.

**Keywords:** acquisition; dissertations; evaluation; journals; university financing; university libraries

### **1. Introduction**

In the past few years, Finnish universities have taken place within the major changes. Organizations have been merged and the new University Act came into effect on 1st January 2010. Under the new Act, the universities were given autonomy over decision-making, but also more responsibility for their own financing. At present, about 64% of the university budget is provided by the government and the rest of the financing comes from paid services, donations and sponsoring.

The number of academic degrees and scientific publications is more and more important for university financing. University libraries have a key role in

supporting the publishing activities of the university by developing library services and acquiring resources for teaching and research.

In this role high-quality collection development is important for the library. Quality criteria for acquisition are determined in library's collection policy. To measure and evaluate the quality of collection library needs both quantitative and qualitative methods. Traditionally, the library statistics are quantitative as the collections size, number of journal titles and storage units, amount of electronic journals' downloads and material acquisition costs. Quantitative as well as qualitative data can be collected using questionnaires and user surveys. This is the way to find out how the library has succeeded in developing services and how library users have utilized the material they get from the library.

In Finland research libraries collect statistics in the Finnish Research Library Statistics Database ([https://yhteistilasto.lib.helsinki.fi/language.do?action=Change & choose\\_language=3](https://yhteistilasto.lib.helsinki.fi/language.do?action=Change&choose_language=3)). The database follows the international ISO2789 library standard. This database is a good tool for analyzing the statistical data by using time series, benchmarking or key figures that are automatically calculated by the system. The Finnish National Electronic Library, FinELib consortium, gathers financial and statistical data about acquisition and use of electronic library resources. Additionally, libraries collect their own statistics. Costing is one method to get price indicators to services, materials and work of the library.

In this paper we focus to analyze the value of journal collection for doctoral students of the University of Eastern Finland (UEF) and the costs of journals for the library. We made a short examination how much doctoral students have used the journals of the library collection for their dissertations. By this way, we wanted to give an example of how much the University of Eastern Finland Library (UEF Library) supports academic research and publishing by purchasing appropriate material. We also took into account the way of acquirement of these journals. For the research material, we chose four dissertations of each faculty of the University of Eastern Finland published during the year 2012.

## **2. The University of Eastern Finland Library**

The University of Eastern Finland (UEF) (<http://www.uef.fi/en/home>) was constituted at the beginning of the year 2010 as a result of two merged universities, Joensuu and Kuopio. With approximately 15 000 students and 2 800 members of staff, the university is one of the largest universities in Finland.

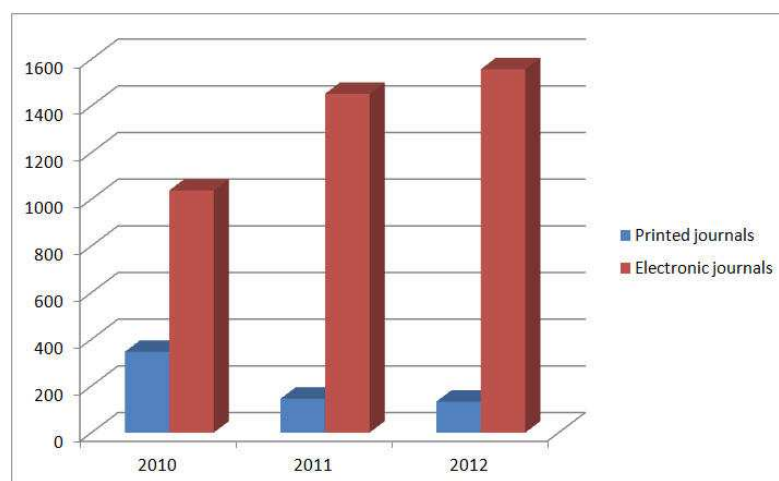
The university comprises four faculties: the Philosophical Faculty, the Faculty of Science and Forestry, the Faculty of Health Sciences, and the faculty of Social Sciences and Business Studies. This multidisciplinary university offers teaching in more than 100 major subjects. During 2012 in the university graduated 1 227 Bachelor's degrees, 1251 Master's degrees, 15 Licentiate's degrees and 152 Doctoral degrees.

The UEF Library is one single administrative entity which comprises the campus libraries in Joensuu, Kuopio and Savonlinna, and the Kuopio University Hospital Medical Library.

The library has both printed and electronic collections. The materials acquired for the collections reflect the university's fields of research and education. Information on the library's printed collections and also a large number of e-books are found in the Josku database. The e-collections include databases, online journals, e-books, online dictionaries and reference books. All the e-resources and also the selected open access journals are available in Nelli (National Electronic Library Interface) portal ([http://www.nelliportaali.fi/V/?institute=UEF&portal=UEF&new\\_lng=eng](http://www.nelliportaali.fi/V/?institute=UEF&portal=UEF&new_lng=eng)).

The UEF Library acquires journals from FinELib (The Finnish National Electronic Library) or from a subscription agent. The FinELib is a consortium of Finnish universities, universities of applied sciences, research institutes and public libraries. The most of the single titles (e-journals/e-books) are not licensed by the consortium - only packages of e-journals /e-books.

In 2012, the total material costs of the UEF Library were 2 601 700 €. The sum was 33, 6 % of the library's total costs and 1, 1 % of the frame organization's (UEF) total costs. The library used 132 900 € for printed journals and 1 557 100 € for e-journals, approximately 65 % from the library's total material costs.



**Figure 1.** Journal costs (1000 €) of the UEF Library in years 2010-2012

### 3. Methodology

The aim of this example is to investigate how much the journals used in dissertations cost to the library at the minimum and show one way how the library supports the research of the university. Often, when evaluating the value of a single journal and is it worth acquiring, it has been counted the price for a single used article. The idea of this example is that even if the articles of a journal are used many times or not at all, the library has to pay the whole price of the journal.

The other aim is to find out differences in a use of journals acquired by the library between the university faculties and consider whether this sample of the

cost of new journals (the publication year of references is 2010 or later) could act as an indicator and by this way show which faculties need to be supported more with reasonable journals by the library.

At first we randomly picked up four dissertations per faculty published in 2012 (total 16) from the UEF Electronic Publications database. The database contains University Series electronic versions, especially doctoral dissertations, but also other academic theses.

Then we counted the total number of the references of each dissertation and analyzed a sample of the newest journals used in them. We chose only journal references published in the year 2010 or later. The UEF constituted at the beginning of the year 2010 and since that year the UEF Library acquisition budget and subscription agent has been common with two merged university libraries, Kuopio and Joensuu. Other reason for selecting only the newest journals was to keep the data set reasonably small enough, if we think the possibility to calculate a cost of the journals and use it as an indicator. We counted the number of the new article references of each dissertation and its' percent of all references.

After selecting and counting the new journal references we defined if the library had acquired these journals or not. For this, we searched for the selected journals in UEF's Nelli-portal, which contains all of the UEF Library's electronic collections. If we didn't find the journal in electronic form from the Nelli-portal, we searched for its' printed form in the library's Josku-database. Josku contains all printed material of the UEF Library.

After defining the set of journals the library had acquired, we counted how many of them were acquired from the FinELib consortium and how many by the subscription agent. We counted also open access journals. Next step was to determine their costs to the library. When we determined the price for an individual journal, we used the references' publication year. If the same journal of the same year was used more than once in a reference list, we counted the price for it only one time. We got the exact price for a journal from the agent's database. If the library had acquired the journal from the consortium, we counted an average price for the journal. When libraries acquire journals through the consortium, they usually buy a package of the journals of some publisher rather than individual journals.

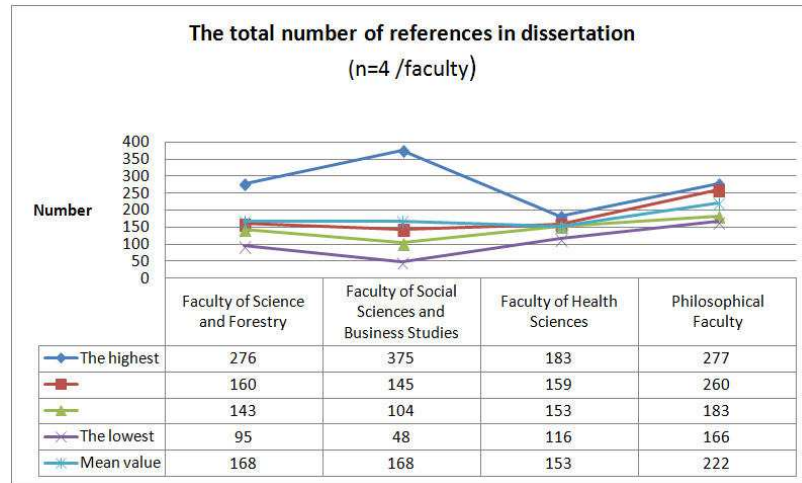
If the library like to use the costs of the new journals used in dissertations to evaluate its' collection, the average cost of dissertations could be used as an indicator. This indicator could show at least a minimum cost value of library's support to research. "A minimum value" here means the total cost of the new journals acquired by the library and used in a single dissertation.

It is good to notice that the most of the references, for example older journals and all monographs are excluded from this example. Maybe the library could use the average cost indicator to see which faculties need to be supported more with accurate journals. For discussing this, we took the number of doctoral degrees into the same table with the new journal references used in dissertations and acquired by the library.

#### 4. Findings

##### Reference numbers of the dissertations

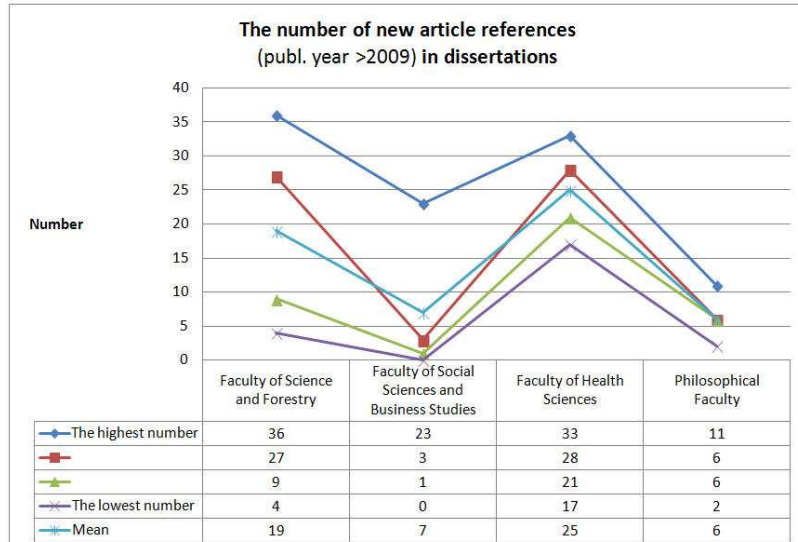
We counted the total number of the references of each dissertation.



**Figure 2.** The total number of the references of each dissertation.

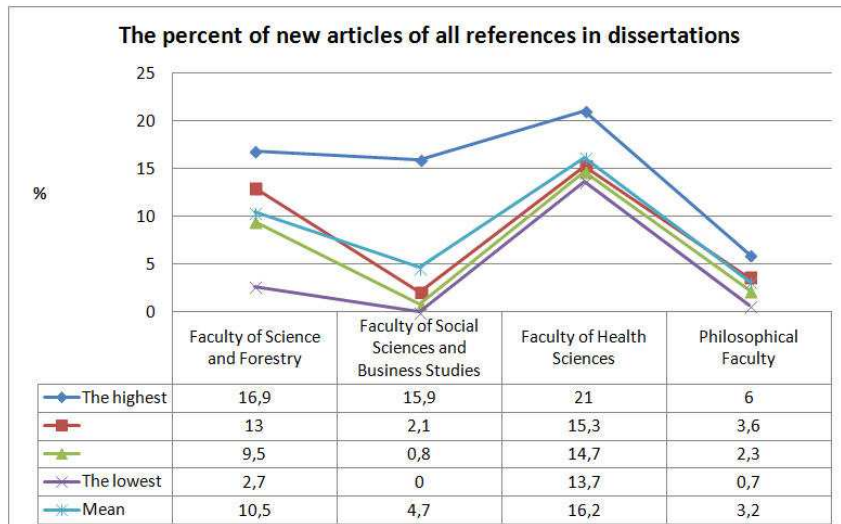
The highest number, 375 references was in a dissertation of Faculty of Social Sciences and Business Studies. This faculty had the lowest number of 48 references too. The number of references varies the most in this faculty. The total number of the references varies the least in the dissertations of Health Sciences and their mean value was 153.

We picked up and counted the number of the new article references. Their publication year in the dissertations was 2010 or later.



**Figure 3.** The number of the new article references (publ. year >2009) in dissertations.

Then we counted the percent of the new article references of all references (publ. year >2009) in dissertations.



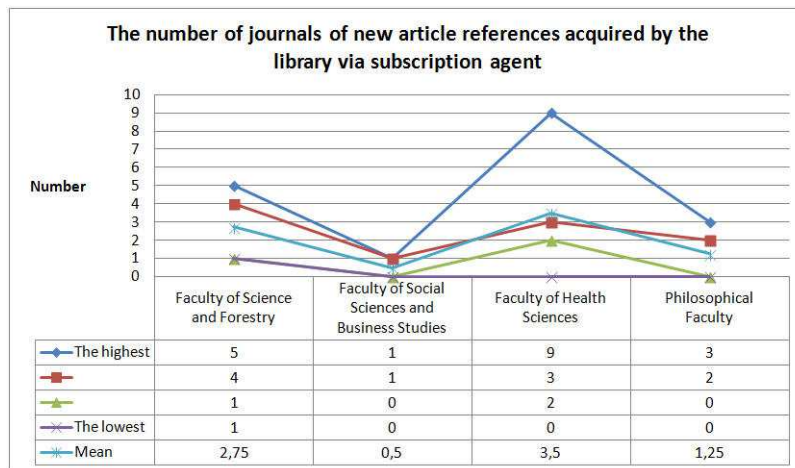
**Figure 4.** The percent of the new articles of all references in dissertations.

The dissertations of the Faculties of Science and Forestry and Health Sciences had the highest percent of new article references. The highest percent 21 was in

a dissertation of Health Sciences. The highest mean value 16, 2 % was in the dissertations of Health Sciences and the lowest 3, 2 % in the dissertations of Philosophical Faculty. The percent of new article references varies most in the dissertations of Social Sciences and Business Studies – from 0 % to 15, 9 %.

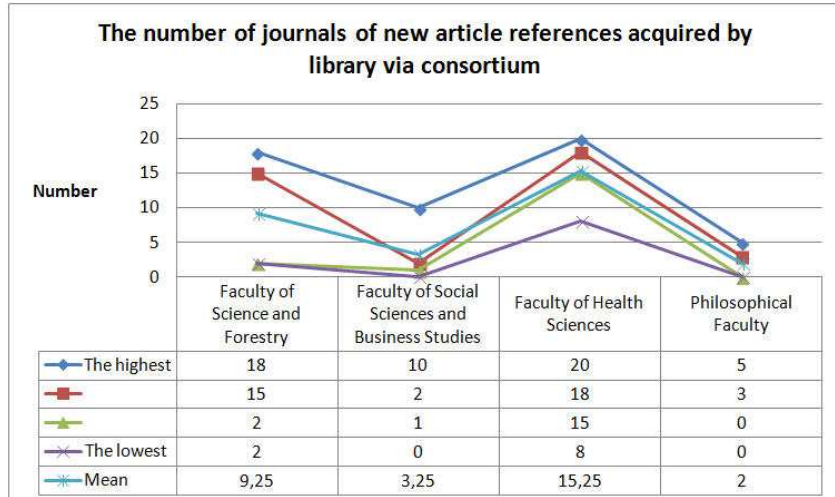
**Acquisition of new journals used in dissertations**

We counted the numbers of the journals which the library had acquired.



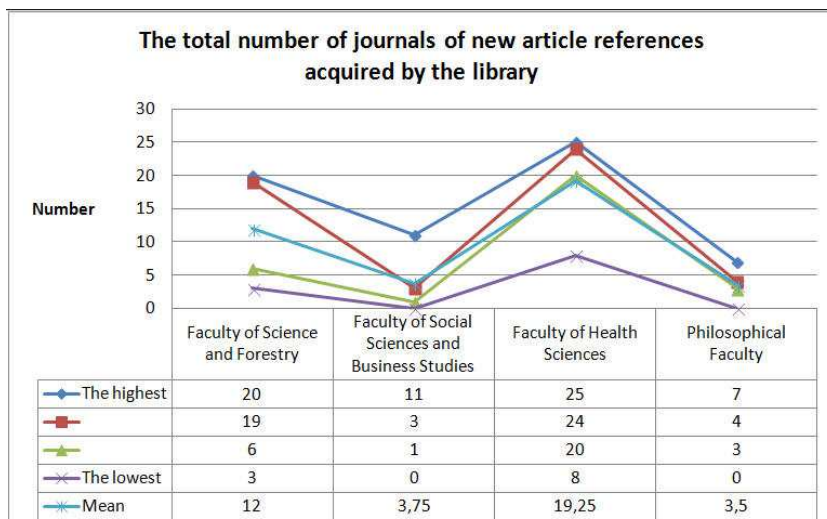
**Figure 5.**The number of journals of new article references acquired by the library via subscription agent.

Summary of the number of journals of new article references acquired by the library via subscription agent shows, that library has acquired the most of the new journals used in dissertations for the Faculty of Health Sciences and for the faculty of Science and Forestry. The lowest number of used new journals has been acquired for the Faculty of Social Sciences and Business Studies.



**Figure 6.** The number of journals of new article references acquired by library via consortium.

Summary of the number of journals of new article references acquired by the library via consortium shows, that library has acquired the most of the new journals used in dissertations for the Faculty of Health Sciences and for the Faculty of Science and Forestry. The lowest number of used new journals has been acquired for the Philosophical Faculty.



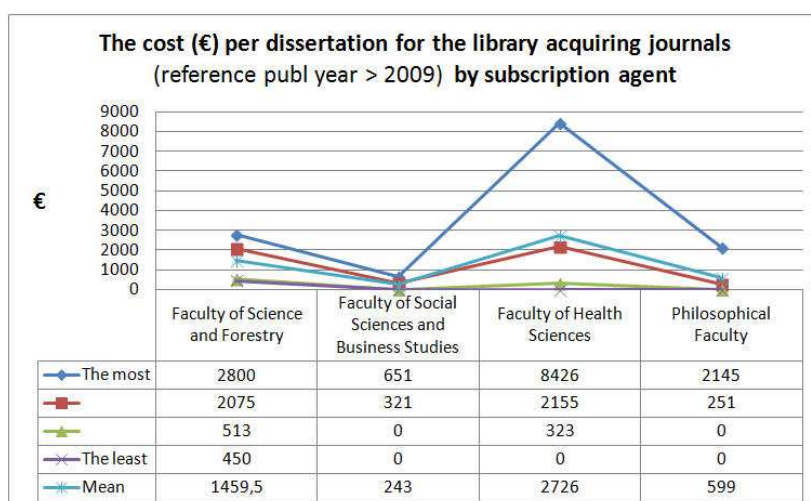
**Figure 7.** The total number of journals of new article references (publ. year >2009) acquired by the library.



Summary of the number of journals of new article references acquired by the library shows, that library has acquired the most of the new journals used in dissertations for the Faculty of Health Sciences and for the Faculty of Science and Forestry. The lowest number of used new journals has been acquired for the Philosophical Faculty. A few of the journals were open access. They are included in the total number of journals.

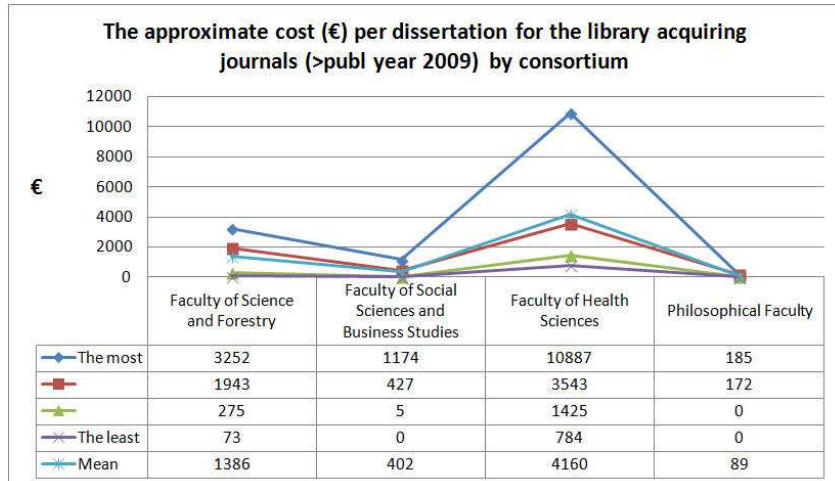
**The costs of the journals**

We gathered the prices of the journals from the subscription agents’ database and from the consortium and then we estimated the values of the dissertations.



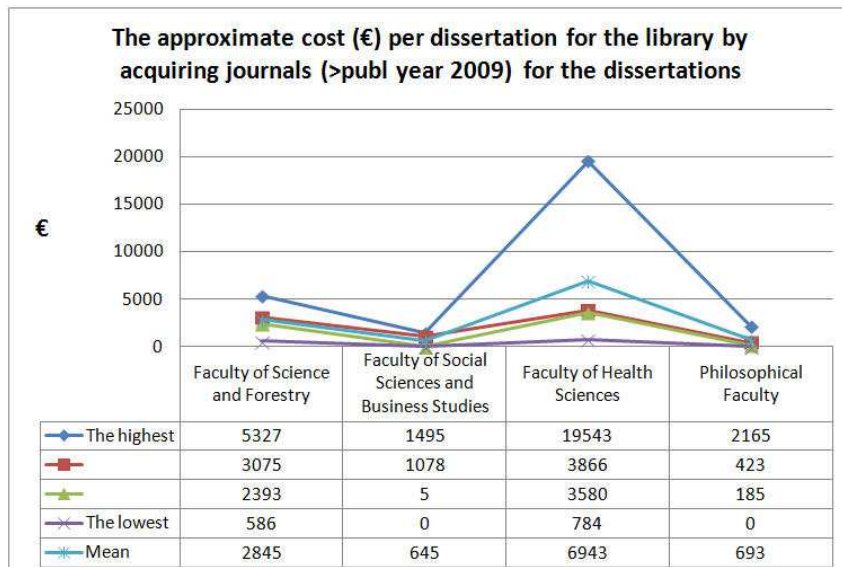
**Figure 8.** The cost (€) per dissertation for the library acquiring journals by subscription agent.

Summary of the cost (€) per dissertation for the library shows that the dissertations of the Faculty of Health Sciences are the most expensive for the library (mean is 2726 €) when the journals have been acquired by the subscription agent.



**Figure 9.** The approximate cost (€) per dissertation for the library acquiring journals by consortium.

Summary of the cost (€) per dissertation for the library shows that the dissertations of the Faculty of Health Sciences are the most expensive for the library (mean is 4160 €) when the journals have been acquired by the consortium.

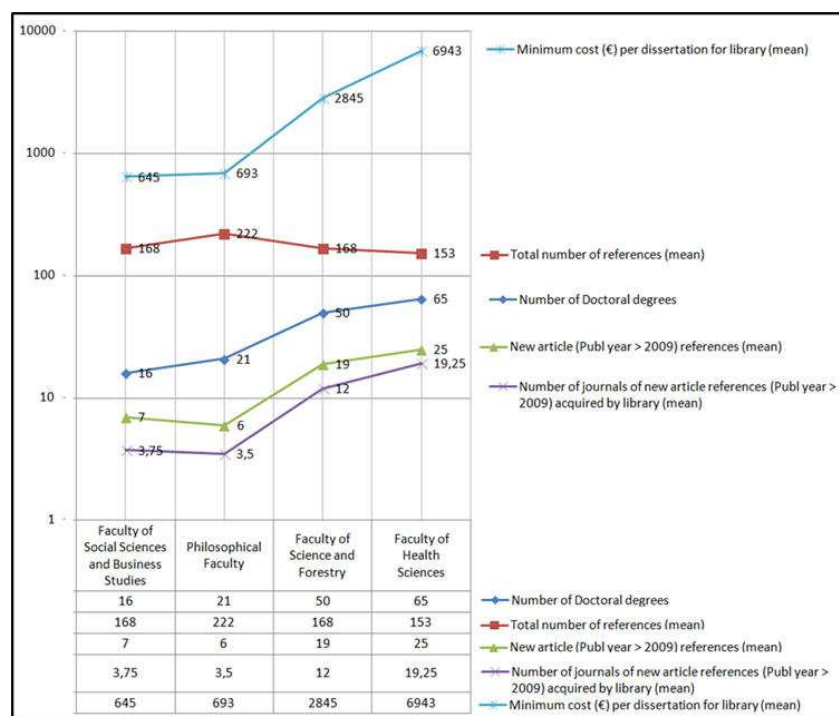


**Figure 10.** The approximate cost (€) per dissertation for the library

Summary of the cost (€) per dissertation for the library shows that the dissertations of the Faculty of Health Sciences are the most expensive for the library. The mean value is 6943 € and the highest value is even 19543 €. The mean value for the Faculty of Science and Forestry is 2845 € and the highest value is 5327 €. Mean value for the Faculty of Social Sciences Business Studies is 645 € and for Philosophical Faculty is 693 €.

**Summary of results**

Into the last figure (Figure 11), we collected the most inspiring results and compared them with the number of doctoral degrees of 2012. We wanted to estimate the results between faculties.



**Figure. 11.** Summary of results.

The minimum cost per dissertation for the library, the number of doctoral degrees and the numbers of new article references show the same trends in this picture. The Faculty of Social Sciences and Business Studies and the Philosophical Faculty have the lowest numbers and lowest costs whereas the Faculty of Health Sciences has the highest numbers and highest costs for the library. The doctoral students of the Faculty of Health Sciences have most doctoral degrees and the library had used most money for the journals of this faculty.

The total number of references (mean value) is the highest in the Philosophical Faculty (222) and the lowest in the Faculty of Health Sciences (153).

## **5. Conclusions and discussion**

High-quality collection development is important for the library to support university research. Acquiring appropriate journals for students and researches is important for the collection development.

First goal of this example was to investigate how much the journals used in dissertations by doctoral students cost for the library at the minimum. The other goal was to find out whether there are differences between the university faculties within this cost and to discuss about can this cost be an indicator for the library in its collection development.

We saw differences between the faculties of the number of the references which had been used in dissertations (Fig. 2.) and how their number varied within a single faculty. It seemed that social and philosophical sciences use a lot of references in research contrary to natural and health sciences, maybe it depends on the feature of these sciences.

In figures 3 and 4 we found out that the dissertations of the Faculties of Science and Forestry and Health Sciences had the highest numbers of new article references. The highest percent, 21 was in a dissertation of Health Sciences and the lowest percent, 0 was in a dissertation of the Faculty of Social Sciences and Business Studies. We assume that health sciences mostly use the newest information.

The total number of journals of new article references acquired by the library (Fig. 7.) shows, that library had acquired the biggest number of the new journals used in dissertations for the Faculty of Health Sciences and for the Faculty of Science and Forestry and the lowest number for the Philosophical Faculty. There were not remarkable differences between the way of acquisition to which faculties library had acquired journals most (Fig. 5. and 6.). The mean value of acquired journals was bigger in all faculties if the journals were acquired through the consortium.

The approximate cost (€) per dissertation for the library (Fig. 10.) shows that the journals used in the dissertations' references of the Faculty of Health Sciences were the most expensive for the library. The mean value is 6943 € and the highest value is even 19543 €. The mean value for the Faculty of Science and Forestry is 2845 € and the highest value is 5327 €. The mean value for the Faculty of Social Sciences Business Studies is 645 € and for the Philosophical Faculty is 693 €. The differences between the faculties are rather similar between the journals acquired through an agent or the consortium (Fig. 8. and 9).

Can the mean cost of a sample of new journals acquired by the library and used in dissertations be an indicator for the library in collection development? We assume that the articles which are referred to in the reference lists of the doctoral thesis have really been used and not only downloaded and left without reading. When these journals are acquired by the library, we can suppose that the library has supported the university research by acquiring appropriate

journals for research and by this way the journal collection of the library has a lot of value for money.

Figure 11. shows similar trends between the minimum cost of dissertation for the library and the number of doctoral degrees. This connection is a good reason for the library to acquire the journals which researchers and students propose. If there is lack of journals, especially in those fields that have lower indicators, the library should try to acquire them. At the same time we have to remember the differences between the faculties. Some faculties for example use more books than journals in research. The prices of the journals depend on the branch of science. However, it would be interesting to study more about these findings.

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